

Surface Incident Prevention Plan

KING COUNTY INTERNATIONAL AIRPORT

July 17, 2001

Introduction

On Tuesday July 17, 2001, a Runway Incursion Action Team (RIAT) meeting was convened at the terminal building at King County International Airport-Boeing Field (BFI) Seattle, WA. The following individuals were present at the RIAT meeting:

David Crowner, AAE	Northwest AAAE representative, Spokane International Airport Operations Manager
Lee Neal	Airborne Express
Dave Borland	Bax Global
Oliver Dallas	FAA BFI Airport Traffic Control Tower Manager
Rich Strnad	FAA BFI Airport Traffic Control Tower NATCA Facility Representative
Jim Greene	FAA Regional Runway Safety Program Manager
S. Alex Silva	FAA Regional RIAT NATCA Representative
Mary Hoy	FAA Regional RIAT Flight Standards Representative
Don Bringmann	FAA Regional RIAT Air Traffic Representative
Mark E. Taylor	FAA Regional RIAT Airports Representative
Dave Badger	FedEx
Charlie Atterbury	Chief Flight Instructor, Galvin Flying Service
Cynthia Stewart	Manager, Airport Division Department of Construction and Facilities Management, Boeing Field / King County International Airport
Mike Colmant	Assistant Airport Manager
Sgt. John Eades	King County International Airport Police Department
Cpl. Paula Proffitt	King County International Airport Police/ARFF
Mark Hella	King County International Airport electrician
Pat Fletcher	Regional Runway Safety Program Management Analyst

Background

King County government owns and operates King County International Airport (KCIA), commonly known as Boeing Field (BFI)*. Covering approximately one square mile, about 4 miles from the heart of downtown Seattle, the Airport is one of the busiest general aviation airports in the country. It is used by aircraft of all sizes and types and fills a wide range of commercial and recreational needs.

* In this document, "KCIA" will be used to refer to the county government function and "BFI" will be used for the air traffic function. Much of this introductory information is taken from the KCIA web site
<<http://www.metrokc.gov/airport/operations/>>.

Opened in 1928, the Airport originally was designed to serve both as a municipal airport and as a facility to support the Boeing Company. Today, the Airport continues to serve as the Boeing Company's testing and delivery center and as a major airfreight center for the region's industries. The Airport is a base, also, for about 150 businesses, including air cargo companies, flight schools, charter operations, and helicopter services. Other tenants include hundreds of small aircraft owners who use planes for recreational and business purposes. The Museum of Flight, also located at the Airport, is a destination for many transient flights.

Currently, the Airport handles approximately 375,000 operations annually, of which 15% are IFR (instrumentation) flights and 85% are VFR (visual) flights.

BFI experienced a rate of 0.82 runway incursions per 100,000 operations in calendar year 2000. So far, in calendar year 2001, BFI has the enviable record of zero surface incidents and zero runway incursions.

Proceedings

Mr. Jim Greene, Regional Runway Safety Program Manager, opened the meeting, introduced the members of the Runway Safety Team, and praised the improvement in runway safety at Boeing Field. He then provided an overview of the Runway Safety Program to include National and Regional runway incursion statistical data. During his presentation, he focused on the need to find local solutions to the continuing problem of adapting to changing airport conditions, and offered examples of marking and signage that have proved effective at other airports.

Jim introduced Mr. Oliver Dallas, Manager of the Airport Traffic Control Tower at Boeing Field, who discussed the changes in tower procedures and training which seem to have helped prevent surface incidents and runway incursions in this calendar year. Oliver also emphasized how the air traffic personnel operate more as a team, despite, or because of, the close quarters they have shared since the February earthquake.

Mr. Mike Colmant, Assistant Manager for King County International Airport/Boeing Field, outlined the steps KCIA has taken, and is taking, to inhibit runway safety incidents. Improvements in internal and external communications plus more vigilance in airport and tenant operations have been key to the improved safety record. KCIA management, conscious of the need to fight complacency, reached out to FAA and SeaTac Airport for "a fresh set of eyes." The Aircraft Rescue and Firefighting (AARF) unit, in a program led by Corporal Paula Proffitt, is recertifying all drivers on the airport, beginning with the KCIA maintenance staff and including all tenants. Gary Merlino, the General Contractor for the earthquake repairs, was very knowledgeable in his on-airport work.

Beyond this, the Airport Certification Inspection noted that improvement is needed in the precision of paint markings and super-sizing lines. This is planned for the end of the month.

The group talked about "hot spots" or areas on the airport movement area that have caused problems in the past. All participants conducted an airport inspection and particular attention was paid to the areas of the airport where past incidents have occurred. Concerns were addressed and recommendations were made as noted below.

Findings and Conclusions

Upon completion of the briefings and airport inspection, the following concerns and observations were noted:

Previous Action Items from the existing Surface Incident Prevention Plan and the past RIAT below are shown in regular type. New action items, notes, and completion dates revised as of this July 17, 2001, RIAT are shown **underlined in bold type**.

Action Items. For each Action Item a Responsible Local Office/ Organization and Responsible FAA Regional Oversight Office is identified in parenthesis. An Expected Action Completion Date (EACD) is given for each Action Item.

ACTION ITEM 1: Investigate and address, if appropriate, restricting runway crossings by aircraft, except aircraft over 150,000 pounds, to A1/B1, A9/B5 and A10/B7, and the elimination of Taxiway A2 and A8 between the runways. This change, if implemented, will significantly reduce runway crossings on Runway 13L/31R. (BFI Tower/KCIA) (EACD 11/01/00)

- **Investigated, deemed not viable, and CANCELLED.**

ACTION ITEM 2: Update ATCT airport reference maps to accurately reflect the movement area on Taxiway A, north of A1. (BFI Tower/KCIA) (EACD 10/15/00)

- **Nonmovement Area Boundary Markings are in place but they are not reflected on the maps.**
- **New reference maps will reflect changes for entire airport.**
- **(BFI Tower and ANM-530) (new EACD 10/01/2001)**
- **Cost TBD**

ACTION ITEM 3: Address unassigned runway intersection departures. Aircraft occasionally taxi to an intersection when assigned the full length, especially on Runway 13L/31R, or aircraft taxi to an intersection other than the intersection assigned. This issue will be addressed by educating the pilots through a FSDO newsletter and preparing bulletins for users to provide to local pilots and flight instructors, and follow-up education by FSDO, if required. (BFI Tower/ FSDO/ KCIA/Users) (EACD 11/01/00)

- **BFI Tower procedures now provide:**
 - o **Strips for *all* departures including VFR**
 - o **Intersection departures on strips are highlighted**
 - o **One frequency for a given runway (elimination of extra frequency for IFR departures)**
- **ATCT will furnish statistics on problem areas to the FSDO**
- **ATCT and FSDO will collaborate on articles for the monthly safety newsletter**
- **FSDO will provide a bulletin and a newsletter article by (SEA FSDO and ANM-230) (EACD 10/31/01)**
- **Cost TBD**

ACTION ITEM 4:

- A. Investigate and address operations and procedures used for vehicles inside the runway safety area, such as mowers and other maintenance vehicles. (KCIA/FAA-Airports) (EACD 11/01/00)
- **KCIA has begun a training program to recertify AOA drivers and escorts. Tied to Action Items 6 and 7. (KCIA and BFI; ANM-620 and ANM-530) (New EACD 12/31/2001)**
 - **Cost TBD**
- B. Currently, these vehicles are in communication with Ground Control, and it may be more appropriate to have these vehicles in communication with Local Control. (BFI Tower/KCIA/ FAA-Airports) (EACD 11/01/00)
- **Ground Control (GC) is now the first point of contact when a vehicle wants to move on the AOA. Ground Control transfers the driver to Local Control. County vehicles talk to GC, and then switch to the frequency for the closest runway. COMPLETE.**

ACTION ITEM 5: Investigate and address, if appropriate, temporary threshold markings that can be used when a portion of the runway is closed, and markings used when an entire runway is closed. (BFI Tower/KCIA/FAA-Airports) (EACD 11/01/00) **COMPLETE.**

- **Plywood Xs, lighted Xs, steel plates, and traffic cones are used as appropriate.**

ACTION ITEM 6: Implement new procedures for the use of security badges for personnel with access to airside. (KCIA/Users) (EACD 12/01/00) **refer to Action Item 7 below:**

ACTION ITEM 7: Establish and implement a new driver training program. (KCIA) (EACD 12/01/00)

- **KCIA has begun a training program to recertify AOA drivers and escorts. Tied to Action Items 4A. and 6 (KCIA and BFI; ANM-620 and ANM-530) (New EACD 12/31/2001)**
- **Cost TBD**

ACTION ITEM 8: Investigate and implement taxiway paint markings to depict movement areas along the east side of Taxiway Alpha and the west side of Taxiway Bravo. (BFI Tower/KCIA/Users) (EACD 10/15/00)

- **KCIA is trying to find a contractor who can remove 2 miles of old, narrow lines.**
- **KCIA has added Nonmovement Area Boundary Markings along the east side of Taxiway A.**
- **New BFI Procedure has been instituted: Aircraft cannot be parked between runways if dual runways are going to be used.**
- **Other airports have added verbiage to the pavement in non-movement areas. ANM-620 will provide information so KCIA staff can contact these airports to compare findings.**
- **Add Nonmovement Area Boundary Markings at TWY B-1 and B-10 and at B-1 add pavement marking language to contact tower for clearance onto the movement area.**
- **(KCIA; ANM-620) (New EACD 9/01/2001)**
- **Cost TBD**

ACTION ITEM 9: Investigate and address ramp management issues, including service vehicles operating in and adjacent to the vehicle control lane. (KCIA/Users) (EACD 11/01/00)

- **Letter of Agreement completed 2/15/2001. Has been revised since then, and re-drafted again.**
- **COMPLETE.**

ACTION ITEM 10: Improve runway and taxiway paint markings, and signage, including:

- A. Runway edge markings on Runway 13L/31R at A2 and A8. **COMPLETE.**
- B. Double-width holds lines at A2, A9, A10 and A11. **All Nonmovement Area Boundary Markings and Runway Holding Position Markings will be double-width. (KCIA; ANM-620) (New EACD 9/30/2001)**
- C. Runway designators painted on the surface at A2, A9, and A10. **COMPLETE.**
- D. Other minor improvements at other intersections. **CANCELLED – CLOSED.**
- E. Additional tower frequency signs at specified locations. **COMPLETE.**
- F. Improve signage or pavement markings at A9 to mark unusable areas between A9 and the threshold of Runway 31R. **At A-9/A intersection, reorient “TWY ➔” sign, use reflective material on the sign, and possibly change it to “A ➔”. Also install a no-entry sign between Runway 31R and Taxiway A. (KCIA; ANM-620) (New EACD 12/31/2001)**
- G. Place additional taxiway exit signs on both runways at specified locations. (BFI Tower/KCIA/FAA-Airports) (EACD 11/01/00) **CANCELLED – CLOSED.**

ACTION ITEM 11: Investigate and address operations, procedures, pavement markings, and signage on the taxiways between the runways. (BFI Tower/KCIA/FAA-Airports) (EACD 12/01/00) **COMPLETE.**

ACTION ITEM 12: Complete and implement the KCIA/BFI Tower Letter of Agreement (LOA) regarding the control of service vehicles on movement areas. (BFI Tower/KCIA) (EACD 10/1/00)

- **LOA completed 2/15/2001. Has been revised since then, and re-drafted again. COMPLETE.**

ACTION ITEM 13: Correct the airport lighting deficiencies identified in the airport inspection report. (KCIA) (EACD 10/01/00) **COMPLETE.**

Aviation Safety Program Pilot Safety Meeting

On May 24th, eight weeks before the RIAT evaluation, the Runway Safety Program and the Aviation Safety Program sponsored an Aviation Safety Program Pilot Safety Meeting in the Boeing Field Museum of Flight. The meeting was held from 7:00 PM to 9:00 PM and included presentations by Don Bringmann (ANM-530), Willie Eigner (ANM-475), Harold Hutchins (Seattle Flight Standards Aviation Safety Inspector-GAO), Mark Taylor (ANM-620), and Jim Greene (Northwest Mountain Region Runway Safety Program Manager).

Participants viewed two videos on runway safety then discussed general runway concerns and some issues specific to KCIA/BFI (such as the effect, on small aircraft, of jets turning from Taxiway Alpha). Oliver Dallas, BFI Tower Manager, joined Hutchins and the Regional Runway Safety Team, in responding to questions from the audience.